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Part I: Overview of Business

The Boone County Department of Natural Resources has been in existence for nearly 30 years and manages 9 different parks and recreation areas. They ensure the health of the county's forests, prairies, and waterways as well as develop stewardship and enjoyment of natural areas through education programs. In conjunction with management and education, the DNR also conducts research often in collaboration with universities in an effort to learn more about our local environment and protect it in the future.

Part II: Job Specifics

- The DNR works to estimate and record the populations of flora and fauna in the local Boone county area.
- I was in charge of the Monarch Larvae Monitoring Project. This project originated from a researcher working at the University of Minnesota on monarch butterfly population studies. I conducted a variety of monarch surveys measuring egg, larvae, and adult densities as well as recording milkweed densities and characteristics at random.

Part III: Introduce the Problem

- How could we help researchers understand why monarch butterfly populations are declining?
- Why can learning about monarch butterfly and milkweed populations help us understand the status of Iowa prairies and grasslands?

Part IV: Background

- Students must research monarchs and begin learning how to identify them at all stages of their lifecycle in order to successfully collect data on population densities. Students must also understand the differences in milkweed in order to help with proper identification.
- The Boone DNR provides a training tutorial for anyone interested in participating in this data collection project. Anyone who participates receives equipment including a magnifying glass, field guides for identification, foldable meter stick for quadrat measuring, and thermometer. monarchlab.org/mlmp

Part V: Business Solution

- The Boone DNR is just beginning to participate in these surveys to help the ongoing research currently being conducted on monarch populations.
- The mission statement of the MLMP project describes their goals for the program
"Our mission is to better understand the distribution and abundance of breeding monarchs and to use that knowledge to inform and inspire monarch conservation."

Part VI: Student Solutions

Hopefully students can propose how monarch population decline can be an indicator of a broader problem among prairie ecosystems (especially with bees and the concerns associated with their decline in recent years) and suggest ways to combat this.